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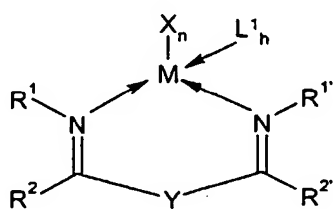
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(54) Title: POLYMERIZATION CATALYSTS, PREPARATION OF POLYOLEFINS, ORGANOTRANSITION METAL COM-
POUNDS AND LIGANDS



(I)

(57) Abstract: The present invention relates to catalyst systems which can be used
for preparing homopolymers or copolymers of olefins and are obtainable by react-
ing at least one transition metal compound with at least one cocatalyst which is able
to convert the transition metal compound into a species which displays polymer-
ization activity toward at least one olefin, wherein the transition metal compound
has the formula (I), where M is an element of group 3, 4, 5, 6, 7, 8, 9 or 10 of the
Periodic Table of the Elements or the lanthanides, X are identical or different and
are each an organic or inorganic anionic monovalent ligand, where two radicals X
may also be joined to form a divalent radical, n is 1, 2, 3 or 4, L¹ is an organic or
inorganic uncharged ligand, h is an integer from 0 to 4, R¹ and R^{1'} can be identical

or different and are each hydrogen or an organic radical having from 1 to 40 carbon atoms, R² and R^{2'} can be identical or different
and are each a substituted or unsubstituted C₆-C₄₀-aryl radical or C₂-C₄₀ heteroaromatic radical containing at least one heteroatom
selected from the group consisting of O, N, S or P, and Y is a divalent group between the two sp²-hybridized carbon atoms and is
selected from the group consisting of the two-membered bridges -N(R³)-N(R⁴)- and -O-N(R⁵)- and the one-membered bridges -O-,
-N(R⁶)-, -N(OR⁷)- and -N(NR⁸R⁹)-, where R³, R⁴, R⁵, R⁶, R⁷, R⁸ and R⁹ are identical or different and are each hydrogen or an organic
radical having from 1 to 40 carbon atoms, where two adjacent radicals may also form a divalent organic group having from 1 to 40
carbon atoms which together with the atom or atoms connecting its ends forms a heterocyclic ring system, to the use of such catalyst
systems for preparing polyolefins, to a process for preparing polyolefins by polymerization or copolymerization of at least one olefin
in the presence of a catalyst system according to the present invention, to transition metal compounds of the formula (I) themselves,
to the use of diimine ligand systems for preparing transition metal compounds and to the preparation of transition metal compounds
and specific diimine ligand systems themselves.

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